



Management of otolaryngology outpatients in COVID-19 pandemic

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ABSTRACT

In this review, we discuss patient management in otolaryngology outpatient clinics during COVID-19 pandemic and present the practices of our own clinic with different examples from different continents. During the pandemic process, outpatient admissions should be postponed and medical services should be provided by telephone or e-mail to prevent healthcare workers from becoming infected. In case of required admissions, after the appropriate triage for COVID-19, the patient must be examined using personal protective equipment. In the pandemic process, the protection of qualified workforce within the health system is the highest priority for the communities. Therefore, guides have been published for healthcare workers to provide health services by protecting themselves from this disease in their daily practices. However, there is no widely accepted guideline worldwide, yet. With the accumulation of experiences to be reported from many continents, a generally accepted guide on how to continue outpatient services, invasive procedures, and elective surgeries can be developed during the pandemic process.

Keywords: COVID-19, healthcare worker, outpatient clinic practice, pandemic, SARS-CoV-2.

On December 31st, 2019, a disease causing severe acute respiratory syndrome (SARS)-like pneumonia was for the first time reported in Wuhan, Hubei province of China. About a week later, in January 2020, it was announced that a new virus called novel coronavirus-2019 (COVID-19) was detected in these patients. Afterwards, this virus was renamed as SARS-coronavirus 2 (SARS-CoV-2) and the associated disease was named as COVID-19 by the World Health Organization (WHO).^[1] The SARS-CoV-2 is a virus belonging to the coronavirus family, such as SARS-CoV and Middle East respiratory syndrome (MERS)-CoV.^[2,3] According to the

latest reports published by the WHO on April 26th, 2020, the number of patients diagnosed with COVID-19 since the onset of the outbreak was 2,719,897, and the number of patients who died was 187,705.^[4] According to the data released by the Republic of Turkey, Ministry of Health, the total number of cases from the first day of the outbreak to the April 26th, 2020 was reported as 110,130 and the number of deaths was reported as 2,805.

Early data revealed that COVID-19 patients over 65 years of age with other comorbid conditions such as diabetes, hypertension, and heart and lung disease had a more severe clinical

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course and higher mortality rates, compared to the general population. The Chinese Center for Disease Control and Prevention (China CDC) reported a mortality rate of 2.3% in the general population.^[5] However, this rate was 6% for patients with hypertension, 7.3% with diabetes, 10.5% with cardiovascular disease, 8% for patients aged 70 to 79 years old, and 14.8% for patients aged 80 years and older.^[5] In a study reported in China, older age (>65 years) and the presence of comorbidities such as hypertension and diabetes were determined as the significant risk factors for the development of acute respiratory distress syndrome (ARDS).^[6]

The average incubation period of SARS-CoV-2 was 5.1 days in a study including 181 cases.^[7] It was also reported that approximately 2.5% of the patients started to show symptoms of COVID-19 after 2.2 days and 97.5% after 11.5 days.

Fever, sore throat, cough, and shortness of breath are the most common symptoms in COVID-19 disease. However, there are also asymptomatic cases. The China CDC reported that, in 889 (1.2%) of overall 72,314 cases, no symptoms were present.^[7] Considering that this rate is based on testing the close contacts of those who are symptomatic, it is likely that there is a higher rate of asymptomatic carriers in the community. In another study, in a family of three positive polymerase chain reaction (PCR) test results and CT findings, two of them were asymptomatic.^[8]

The SARS-CoV-2 can be transmitted mainly from droplets, as well as contaminated foreign body surfaces (e.g., elevator buttons, door handles, etc.). It is also thought that the contact of the infected person with the droplets and aerosols due to coughing and sneezing and, then, touching the mouth and nose with hands also play an important role.^[9] Studies have shown that SARS-CoV-2 can spread with aerosols and can remain alive for approximately 72 hours on plastic and stainless-steel surfaces, 24 to 36 hours on cardboard, 4 to 12 hours on copper surface, and three hours on the air which poses a risk for both nosocomial infections and healthcare workers during examinations that can cause aerosol formation (oropharyngeal and rhinoscopic examinations, or endoscopic examinations).^[10] Furthermore, it was shown that

asymptomatic patients have similar viral loads in the upper airway compared to symptomatic patients, indicating that asymptomatic carriers play also a critical role in the transmission of the disease.^[11]

Healthcare workers are considered to be at a high risk for COVID-19 infection. In a study conducted in China, it was reported that, as of February 24th, 2020, 22 (1.1%) of 2,055 healthcare workers died due to COVID-19, and 2.7% of all COVID-19 cases were healthcare workers.^[12] Due to the transmission routes and viral colonization at the nasopharynx, the risk of becoming infected is higher amongst otolaryngologists than most of the others.^[13] Additionally, similar to the SARS outbreak in 2003, the first globally documented physician who died from COVID-19 was an otolaryngologist.^[14]

Although guidelines are published every day by health authorities or associations, there is currently no widely accepted protocol on how to perform ear, nose and throat (ENT) examination during the pandemic. In this review, we discuss the arrangements made for COVID-19 in the ENT outpatient clinic of our institution and compare our practice with different approaches in different continents.

MANAGEMENT OF ENT OUTPATIENT

General suggestions

Considering the rate of spread and case doubling time of SARS-CoV-2 in the current community, the first precaution which should be taken is postponing some routine and non-urgent elective procedures and outpatient appointments. Patients should be questioned both for the current status of their current disease and for complaints that may be related to COVID-19. Depending on the information received from the patient, a visit to an outpatient clinic or a triage assessment for COVID-19 may be required. Telephone or telemedicine applications can be used for this process. In this way, reducing the number of outpatients is seen as a first-step preventive measure. Similarly, it is known that the number of patients admitted to the otolaryngology outpatient clinics in Hong Kong has decreased by 50% during the pandemic.^[14] Also, following the recommendations of the American Academy

of Otolaryngology-Head and Neck Surgery, many clinics have been reported to decrease the volume of outpatients by over 80%.^[15] Likewise, we have also reduced the number of patients in the outpatient clinic to 10% of the pre-pandemic period. Also, as in many clinics, the number of physicians and nurses working daily has been reduced in our clinic to protect the healthcare workers from possible risks and to protect the pool of healthy healthcare workers during the pandemic which is not expected to end soon. While five physicians, two nurses, three medical secretaries, and one staff/health officer actively worked in the pre-pandemic period, the numbers reduced to only one physician and one nurse per day during the pandemic.

Due to the presence of asymptomatic patients in the community is known, the outpatients should be questioned. Otherwise, it would be inevitable for a large number of patients and healthcare professionals to be infected in outpatient clinics. Review of the literature revealed that a preliminary assessment was made for COVID-19 not only in otolaryngology-head and neck clinics, but also in clinics which continued to provide active service during the pandemic.^[16-18] In accordance with this, all of the patients who applied to our outpatient clinic were questioned on the complaints suggesting COVID-19 and their body temperature was measured. Patients with any of these complaints (anosmia, fever, sore throat, cough, and shortness of breath) and patients with a history of close contact with patients diagnosed with COVID-19 were referred to the triage area established in front of the emergency units (EU) of our hospital. The patients who were evaluated in the triage area and were not suspected of COVID-19 were admitted to our outpatient clinic with surgical masks. Commentaries reported from

the Lombardy region in Italy stated that all of the patients who applied to the otolaryngology clinics were first seen in the EU and, after the evaluation in the EU, an otolaryngologist evaluated the patient in the EU, if necessary.^[19]

In the second stage, if it is not possible to delay the examination, maximum protection for both patients and physicians should be taken. There are literature data available suggesting that risk classification should be made based on the patients and examinations (Table 1). These risk classifications state that, for patients with low-risk COVID-19 positivity, routine use of masks is not suggested, even during examinations in which aerosol production is possible.^[20] On the contrary, in our clinic, due to the presence of asymptomatic patients in the community is known, we ensure that all patients who apply to our clinic wear a mask. This practice is also important for the protection of patients who are expected to be in contact with healthcare workers who are in the risk group. If the patient visits the clinic without a mask, the mask is provided and the patient is taken to the examination room with a mask. The healthcare workers and physician who welcome the patient work with a surgical mask, protective waterproof gown/coveralls, and goggles/face shield. Meanwhile, care is taken to use personal protective equipment (PPE), but at the same time not to consume limited resources. In our outpatient setting, only one examination room was actively used during the pandemic. In the examination room, only enough equipment to be used for the examination of the next patient was prepared and, after the preparation was completed, all staff other than the physician was removed from the room. Unless needed during the examination, nurses and other healthcare workers were not taken to the examination room.^[20]

Table 1. Risk classification according to patients and examinations for COVID-19 in the outpatient setting

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- Is the patient already diagnosed with COVID-19
 - Is there any close contact with patients diagnosed with COVID-19
 - Are there any close contact with people with the symptoms suggesting COVID-19
 - Are there any complaints such as sore throat - cough - fever - shortness of breath - loss of smell
 - Is the patient immunocompromised
 - The potential of the examination to generate aerosol
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Examination-specific suggestions

In the routine practice, the examinations performed by an otolaryngologist can be classified into three main groups: ear, nose, and throat.

The ear examination can be performed while the patient is wearing a mask, which makes it safer than the remaining examinations of an otolaryngologist. However, all elective procedures should be still postponed. If the examination is mandatory, an otomicroscopic examination should be preferred rather than the otoscopic examination to maintain the distance between the patient and the physician. Patients who were operated in the previous weeks, particularly in the first days, where pandemic affected our country, had to come to their first postoperative controls and they were examined with taking the aforementioned precautions. Contrary to our clinical practice before the pandemic, the patients who were examined during the pandemic were evaluated with examinations focused only on their complaints instead of a comprehensive otolaryngological examination.

Nasal and throat examinations carry a higher risk of disease transmission to the physician than the ear examination, particularly since the reservoir area of the virus is known to be the upper respiratory tract.^[11] Therefore, all elective nose examinations should be postponed. When the nose examination is performed, the use of endoscopes, suction or diathermy should be avoided to prevent the patient from sneezing or coughing. Currently, we have ceased to do an endoscopic evaluation for routine nasal cavity examination and in epistaxis management. Similar patient management practices have been reported from the United States.^[15,21]

The throat examination is considered a high-risk examination for aerosol generation, similar to nasal examination. In particular, as the examination of the hypopharynx and larynx, it requires an endoscope or mirror and patients may retch and cough during these examinations. Local anesthetics in the spray form used to prevent this are also not recommended.^[20] Therefore, the most appropriate approach is to postpone these examinations, if possible. If there is a suspicion

of tumoral disease which may affect survival, it may be recommended to wait for the results of the SARS-CoV-2 PCR test of the patient and to tailor the treatment plan according to the test result. If the test result is negative, it is recommended that the examination should be performed with an endoscope connected to the monitor instead of the mirror or endoscope to avoid face-to-face contact with the patient. Endoscopes should not be taken out of the room without disinfection. If available, disposable endoscopes can be used.^[20] An additional proposal suggests that if the endoscopic evaluation is mandatory, the examination can be performed, while the patient wears a surgical mask with an opening sufficient for an endoscope to pass to reduce the aerosol spread to the environment.^[22]

After the examinations are completed, the phone number or an e-mail address (according to the physician's preference) is shared with the patient and the next meetings can be performed on the phone or e-mail first, rather than face-to-face interviews. The phone number and e-mail address of the treating physician are also shared with the patients undergoing surgery before the pandemic and are followed. Due to the availability of our e-mail addresses on the official website of our hospital, a large number of patients have been contacted through this channel, and those deemed necessary have been called to the hospital for a face-to-face examination.

After the examination of each patient, the equipment used must be disinfected. All surfaces that the patient and the physician are in contact with or possibly contacted are cleaned with bleach-based solutions at the concentration (1:100 simple dilution of household bleach) as recommended by the Republic of Turkey, Ministry of Health. If there is significant contamination with the patient's secretions or other body fluids, the room must be cleaned with bleach prepared with 1:10 simple dilution.^[2]

In summary, the following conclusions can be drawn:

- Postponing routine outpatient applications, or if possible, providing medical services by telemedicine applications, telephone, e-mail

- Providing medical services with these applications by contacting patients who are already under follow-up, by telephone or e-mail or telemedicine applications, by delaying their appointments, if possible
- Triaging outpatients and referring patients suspected of having COVID-19 to the relevant area
- Choosing the closest room to the entrance rather than the entire outpatient clinic area for examination, if possible
- Donning the PPE including waterproof gowns or coveralls, double gloves, N95 mask, and goggles/face shields
- The examination focusing on the patient's complaint and not performing endoscopic examinations or aspirations which are likely to generate aerosol, and preventing the examination room from getting contaminated with the patient's secretions and other body fluids as much as possible.
- Telemedicine applications, telephone or e-mail contact before applying directly for subsequent follow-ups/controls
- After the patient leaves the examination room, doffing the PPE in the recommended sequence
- Before taking a new patient to the room, cleaning the room as recommended will be the best approach.

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